STATE OF KANSAS
DEPARTMENT OF HEALTH AND ENVIRONMENT

ARTICLE 30
WATER WELL CONTRACTOR'S LICENSE; WATER WELL CONSTRUCTION

EFFECTIVE SEPTEMBER 28, 1993

Bureau of Water - Geology Section
1000 S. W. Jackson St., Ste. 420
Topeka, Kansas 66612-1367
785/296-5524

Effective May 01, 1987

ARTICLE 30--WATER WELL CONTRACTOR'S LICENSE WATER WELL CONSTRUCTION AND ABANDONMENT

This article regulates the construction, reconstruction, treatment and plugging of water wells and sets forth procedures for the licensing of water well contractors as required by K.S.A. 82a-1201 to 82a-1215 and amendments thereto.

28-30-1. (Authorized by K.S.A. 1979 Supp. 82a-1202, 82a-1205; effective E-74-34, July 02, 1974; modified, L. 1975, ch. 481, May 01, 1975; revoked May 01, 1980)

28-30-2. Definitions.

(a) "License" means a document issued by the Kansas Department of Health and Environment to qualified persons making application therefore, authorizing such persons to engage in the business of water well contracting.

(b) "Department" means the Kansas Department of Health and Environment.

(c) "Abandoned Water Well" means a water well determined by the department to be a well;

(1) whose use has been permanently discontinued;

(2) in which pumping equipment has been permanently removed;

(3) which either is in such a state of disrepair that it cannot be used to supply water, or it has the potential for transmitting surface contaminants into the aquifer or both;

(4) which poses potential health and safety hazards; or

(5) which is in such a condition it cannot be placed in active or inactive status.

(d) "Water well contractor" or "contractor" means any individual, firm, partnership, association, or corporation who constructs, reconstructs, or treats a water well. The term shall not include:

(1) an individual constructing, reconstructing or treating a water well located on land owned by the individual, when the well is used by the individual for farming, ranching, or agricultural purposes or for domestic purposes at the individual's place of abode; or

(2) an individual who performs labor or services for a licensed water well contractor at the contractor's direction and under the contractor's supervision.

(e) "Aquifer" means an underground formation that contains and is capable of transmitting groundwater.

(f) "Confined aquifer" is an aquifer overlain and underlain by impermeable layers. Groundwater in a confined aquifer is under pressure greater than atmospheric pressure and will rise in a well above the point at which it is first encountered.

(g) "Unconfined aquifer" is an aquifer containing groundwater at atmospheric pressure. The upper surface of the groundwater in an unconfined aquifer is the water table.

(h) "Domestic uses" means the use of water by any person or family unit or household for household purposes, or for the watering of livestock, poultry, farm and domestic animals used in operating a farm, or for the irrigation of lands not exceeding a total of two acres in area for the growing of gardens, orchards and lawns.

(i) "Public water-supply well" means a well that:

(1) provides groundwater to the public for human consumption; and

(2) has at least 10 service connections or serves an average of at least 25 individuals daily at least 60 days out of the year.

(j) "Groundwater" means the part of the subsurface water which is in the zone of saturation.

(k) "Grout" means cement grout, neat cement grout, bentonite clay grout or other material approved by the department used to create a permanent impervious watertight bond between the casing and the undisturbed formation surrounding the casing or between two or more strings of casing.

(1) "Neat cement grout" means a mixture consisting of one 94 pound bag of portland cement to five to six gallons of clean water.

(2) "Cement grout" means a mixture consisting of one 94 pound bag of portland cement to an equal volume of sand having a diameter no larger than 0.080 inches (2 millimeters) to five to six gallons of clean water.

(3) "Bentonite clay grout" means a mixture consisting of water and commercial grouting or plugging sodium bentonite clay containing high solids such as that manufactured under the trade name of "volclay grout", or an equivalent as approved by the department.

(A) The mixture shall be as per the manufacturer's recommendations to achieve a weight of not less than 9.4 pounds per gallon of mix. Weighting agents may be added as per the manufacturer's recommendations.

(B) Sodium bentonite pellets, tablets or granular sodium bentonite may also be used provided they meet the specifications listed in paragraph (k)(3) of this regulation.

(C) Sodium bentonite products that contain low solids, are designed for drilling purposes, or that contain organic polymers shall not be used.

(l) "Pitless well adapter or unit" means an assembly of parts installed below the frost line which will permit pumped groundwater to pass through the wall of the casing or extension thereof and prevent entrance of contaminants.

(m) "Test hole" or "hole" means any excavation constructed for the purpose of determining the geologic, hydrologic and water quality characteristics of underground formations.

(n) "Static water level" means the highest point below or above ground level which the groundwater in the well reaches naturally.

(o) "Annular space" means the space between the well casing and the well bore or the space between two or more strings of well casing.

(p) "Sanitary well seal" is a manufactured seal installed at the top of the well casing which, when installed, creates an airtight and watertight seal to prevent contaminated or polluted water from gaining access to the groundwater supply.

(q) "Treatment" means the stimulation of production of groundwater from a water well, through the use of hydrochloric acid, muratic acid, sulfamic acid, calcium or sodium hypochlorite, polyphosphates or other chemicals and mechanical means, for the purpose of reducing or removing iron and manganese hydroxide and oxide deposits, calcium and magnesium carbonate deposits and slime deposits associated with iron or manganese bacterial growths which inhibit the movement of groundwater into the well.

(r) "Reconstructed water well" means an existing well that has been deepened or has had the casing replaced, repaired, added to or modified in any way for the purpose of obtaining groundwater.

(s) "Pump pit" means a watertight structure which:

(1) is constructed at least two feed away from the water well and below ground level to prevent freezing of pumped groundwater; and

(2) houses the pump or pressure tank, distribution lines, electrical controls, or other appurtenances.

(t) "Grout tremie pipe" or "grout pipe" means a steel or galvanized steel pipe or similar pipe having equivalent structural soundness that is used to pump grout to a point of selected emplacement during the grouting of a well casing or plugging of an abandoned well or test hole.

(u) "Uncased test hole" means any test hole in which casing has been removed or in which casing has not been installed.

(v) "Drilling rig registration license number" means a number assigned by the department which is affixed to each drilling rig operated by or for a licensed water well contractor.

(w) "Active well" means a water well which is an operating well used to withdraw water, or to monitor or observe groundwater conditions.

(x) "Inactive status" means a water well which is not presently operating but is maintained in such a way it can be put back in operation with a minimum of effort.

(y) "Heat pump hole" means a hole drilled to install piping for an earth coupled water source heat pump system, also known as a vertical closed loop system. (Authorized by K.S.A. 1992 Supp. 82a-1205 and implementing K.S.A. 82a-1202, K.S.A. 1992 Supp. 82a-1205, 82a-1213; effective E-74-34, July 02, 1974; modified L. 1975, ch. 481, May 01, 1975; amended May 01, 1980; amended May 01, 1987; amended Nov. 22, 1993.)

28-30-3. Licensing.

(a) Eligibility. To be eligible for a water well contractor's license and applicant shall:

(1) pass an examination conducted by the department; or

(2) meet the conditions contained in subsection (c).

(b) Application and fees.

(1) Each application shall be accompanied by an application fee of $10.00.

(2) Before issuance of a water well contractor's license, each contractor shall pay a license fee of $100.00 plus $25.00 for each drill rig operated by or for the contractor. These fees shall accompany the application and shall be by bank draft, check or money order, payable to the Kansas Department of Health and Environment - Water Well Licensure.

(c) Reciprocity.

(1) Upon receipt of an application and payment of the required fees from a nonresident, the secretary may issue a license, providing the nonresident holds a valid license from another state and meets the minimum requirements for licensing as prescribed in K.S.A. 82a-1207, and any amendments thereto.

(2) If the nonresident application is incorporated, evidence shall be submitted to the Department of Health and Environment showing that the applicant meets the registration requirements of the Kansas Secretary of State.

(3) Nonresident fees for a license shall be equal to the fee charged a Kansas contractor by the applicant's state of residence but shall not be less than $100.00. The application fee and drill rig license fee shall be the same as the Kansas resident fees.

(d) License renewal.

(1) Each licensee shall make application for renewal of license and rig registrations before July 01 of each year by filing the proper renewal forms provided by the department and fulfilling the following requirements:

(A) payment of the annual license fee and a rig registration fee for each drill rig to be operated in the state;

(B) filing of all well records for each water well constructed, reconstructed or plugged by the licensee in accordance with K.S.A. 28-30-4 during the previous licensure period;

(C) filing a report, on a form provided by the department, of all approved continuing education units earned by the licensee during the previous licensure period;

(D) satisfying the continuing education requirements set forth in subsection (g); and

(E) providing any remaining outstanding information or records requested that existed prior to the issuance of revocation of a license.

(2) Failure to comply with paragraphs (A), (B), (C), (D) and (E) above shall be grounds to revoke the existing license and terminate the license renewal process.

(e) Water well construction fee. A fee of $5.00 shall be paid to the Kansas Department of Health and Environment, either by bank draft, check or money order, for each water well constructed by a licensed water well contractor. The construction fee shall be paid when the contractor requests the water well record form WWC-5 from the department or shall accompany the water well records submitted on form WWC-5 as required under K.A.R. 28-30-4. No fee shall be required for reconstruction or plugged water wells.

(f) License number. Each drill rig operated by or for a licensed water well contractor shall have prominently displayed thereon the drill rig license number, as assigned by the department, in letters at least two inches in height. Decals, paint, or other permanent marking materials shall be used.

(g) Continuing education requirements. Licensed water well contractors shall earn at least eight units of approved continuing education per year beginning with the first full year of licensure or the renewal period. One unit of continuing education shall equal 50 minutes of approved instruction except for trade shows and exhibitions which shall be counted as one unit per approved trade show and exhibition attended. (Authorized by K.S.A. 1992 Supp. 82a-1205; implementing K.S.A. 82a-1202, K.S.A. 1992 Supp. 82a-1205, 82a-1206, 82a-1207, 82a-1209; effective, E-74-34, July 02, 1974; effective May 01, 1975; amended May 01, 1980; amended May 01, 1983; amended May 01, 1987; amended Nov. 22, 1993.)

28-30-4. General operating requirements.

(a) *Water well record*. Within 30 days after construction or reconstruction of a water well, the water well contractor shall submit a report of such work, to the Kansas Department of Health and Environment and the landowner, on the water well record form, form WWC-5, provided by the department. The contractor shall report to the department and to the landowner on the water well record or attachments made thereto any polluted or other noncompliant conditions which the contractor was able to correct and any conditions which the contractor was unable to correct. The contractor shall report to the department and the landowner the plugging of any abandoned water well. The report shall include the location, landowner's name, method, type of material, its placement and amount used to plug the abandoned water well.

A landowner who constructs, reconstructs, or plugs a water well, which will be or was, used by the landowner for farming, ranching or agricultural purposes or is located at the landowner's place of abode, shall submit a water well record, on Form WWC-5, of such work to the department within 30 days after the construction, reconstruction or plugging of the water well. No fee shall be required from the landowner for the record.

(b) *Artificial recharge and return.* The construction of artificial recharge wells and freshwater return wells shall comply with all applicable rules and regulations of the department.

(c) *Well tests*. When a pumping test is run on a well, results of the test shall be reported on the water well record, form WWC-5, or a copy of the contractor's record of the pumping test shall be attached to the water well record.

(d) *Water samples*. Within 30 days after receipt of the water well record, form WWC-5, the department may request the contractor, or landowner who constructs or reconstructs his or her own water well, to submit a sample of water from the well for chemical analysis. Insofar as is possible, the department will define in advance areas from which well water samples are required. (Authorized by K.S.A. 82a-1205, and implementing K.S.A. 82a-1202, 82a-1205, 82a-1212, 82a-1213; effective, E-74-34, July 02, 1974; modified, L. 1975, ch. 481, May 01, 1975; amended May 01, 1980; amended May 01, 1987.)

28-30-5. Construction regulations for public water supply and reservoir sanitation zone wells. All activities involving public water supply wells and wells located in reservoir sanitation zones shall conform to existing statues, and rules and regulations, of the Kansas Department of Health and Environment, including K.A.R. 28-10-100, 28-10-101, 28-15-16. (Authorized by K.S.A. 82a-1205; implementing K.S.A. 82a-1202, 82a-1205; effective, E-74-34, July 02, 1974; effective May 01, 1975; amended May 01, 1980; amended May 01, 1983; amended May 01, 1987.)

28-30-6 Construction regulations for all wells not included under section 28-30-5.

(a) each water well shall be so located as to minimize the potential for contamination of the delivered or obtained groundwater and to protect the groundwater aquifers from pollution and contamination.

(b) Grouting:

(1) Construction or reconstructed wells shall be sealed by grouting the annular space between the casing and the well bore from ground level to a minimum of 20 feet or to a minimum of five feet into the first clay or shale layer, if one is present, whichever is greater. If a pitless well adapter or unit is being installed, the grouting shall start below the junction of the pitless well adapter or unit where it attaches to the well casing and shall continue a minimum of 20 feet below this point, or to a minimum of five feet into the first clay or shale layer, whichever is greater.

(2) To facilitate grouting, the grouted interval of the well bore shall be drilled to a minimum diameter at least three inches greater than the maximum outside diameter of the well casing. If a pitless well adapter or unit is being installed on the well's casing, the well bore shall be a minimum diameter of at least three inches greater than the outside maximum diameter of the well casing through the grouted interval below the point where the pitless well adapter or unit attaches to the well casing.

(c) If groundwater is encountered at a depth less than the minimum grouting requirement, the grouting requirement may be modified to meet local conditions if approved by the department.

(d) Waters from two or more separate aquifers shall be separated from each other in the bore hole by sealing the bore hole between the aquifers with grout.

(e) The well casing shall terminate not less than one foot above the finishing ground surface. No casing shall be cut off below the ground surface except to install a pitless well adapter unit, which shall extend at least 12 inches above the ground surface. No opening shall be made through the well casing except for installation of a pitless well adapter designed and fabricated to prevent soil, subsurface and surface water from entering the well.

(f) Well vents shall be used and shall terminate not less than one foot above the ground surface and shall be screened with brass, bronze, copper screen or other screen materials approved by the department which are 16-mesh or greater and turned down in a full 180 degree return bend so as to prevent the entrance of contaminated materials.

(g) Prior to completion of a constructed or reconstructed well, the well shall be cleaned of mud, drill cuttings and other foreign matter so as to make it suitable for pump installations.

(h) Casing. All wells shall have durable watertight casing from at least one foot above the finished ground surface to the top of the producing zone of the aquifer. The watertight casing shall extend not less than 20 feet below the ground level. Exceptions to either of the above requirements may be granted by the department if warranted by local conditions. The casing shall be cleaned and serviceable and of a type to guarantee reasonable life so as to insure adequate protection to the aquifer or aquifers supplying the groundwaters. Used, reclaimed, rejected,

or contaminated pipe shall not be used for casing any well. All water well casing shall be approved by the department.

(i) All wells, when unattended during construction, reconstruction, treatment or repair, or during use as cased test holes, observation or monitoring wells, shall have the top of the well casing securely capped in a watertight manner to prevent contaminating or polluting materials from gaining access to the groundwater aquifer.

(j) During construction, reconstruction, treatment or repair and prior to its first use, all wells producing water for human consumption or food processing, shall be disinfected according to K.A.R. 28-30-10.

(k) The top of the well casing shall be sealed by installing a sanitary well seal.

(l) All groundwater producing zones that are known or suspected to contain natural or manmade pollutants shall be adequately cased and grouted off during construction of the well to prevent the movement of the polluted groundwater to either overlying or underlying fresh groundwater zones.

(m) Toxic materials shall not be used in the construction, reconstruction, treatment or plugging of a water well unless those materials are thoroughly flushed from the well prior to use.

(n) Any pump pit shall be constructed at least two feet away from the water well. The pipe from the pump or pressure tank in the pump pit to the water well shall be sealed in a watertight manner where it passes through the wall of the pump pit.

(o) Water wells shall not be constructed in pits, basements, garages, or crawl spaces. Existing water wells which are reconstructed, abandoned and plugged in basements shall conform to these rules and regulations except that the finished grade of the basement floor shall be considered ground level.

(p) All drilling waters used during the construction or reconstruction of any water well shall be initially disinfected by mixing with the water enough sodium hypochlorite to produce at least 100 milligrams per liter, mg/l, of available chlorine.

(q) Natural organic or nutrient producing material shall not be used during the construction, reconstruction or treatment of a well unless it is thoroughly flushed from the well and the groundwater aquifer or aquifers before the well is completed. Natural organic or nutrient producing material shall not be added to a grout mix used to grout the well's annular space.

(r) Pump mounting.

(1) All pumps installed directly over the well casing shall be so installed that an airtight and watertight seal is made between the top of the well casing and the gear or pump head, pump foundation or pump stand.

(2) When the pump is not mounted directly over the well casing and the pump column pipe or pump suction pipe emerges from the top of the well casing, a sanitary well seal shall be installed between the pump column pipe and pump suction pipe and the well casing. An airtight and watertight seal shall be provided for the cable conduit when submersible pumps are used.

(s) Construction of sand point or well point water wells. Sand point or well point water wells shall be constructed by drilling or boring a pilot hole to a minimum depth of three feet below ground surface. The pilot hole shall be a minimum of three inches greater in diameter than the drive pipe or point wells shall only be completed by using the casing method or the drive pipe method as described in paragraphs (1) and (2) below or other methods as described in paragraph (3) below. Sand point wells constructed prior to the effective date of this regulation shall not be required to meet these requirements. All sand point wells that are replaced, constructed, reconstructed or plugged after the effective date of this regulation shall meet these regulations.

(1) Casing method. Approved, durable, watertight well casing shall be set from a minimum of three feet below the ground surface to at least one foot above the ground surface. The casing shall be sealed between the casing and the pilot hole with approved grouting material from the bottom of the casing to ground surface. The drive pipe shall be considered the pump drop pipe. For underground discharge completions, a "T" joint shall be used. The drive pipe shall be capped with a solid cap at the "T" joint when the casing method is used. An approved sanitary well seal and a well vent shall be installed on the top of the well casing in accordance with K.A.R. 28-30-6 (f) and (k).

(2) Drive pipe method. Sand point wells may be installed without a casing for above ground discharge completions only. In such completions, the drive pipe shall terminate at least one foot above finished ground level. The annular space between the drive pipe and the pilot hole shall be sealed with approved grouting material from the bottom of the pilot hole to ground surface. The top of the drive pipe shall be sealed airtight and watertight with a solid cap of the same material as the drive pipe. A well vent shall not be required for the drive pipe method.

(3) Other methods. Other methods may be specifically approved by the department on a case-by-case basis by using the appeal procedure included in K.A.R. 28-30-9.

(4) Abandonment of sand point wells. Upon abandonment of a sand point well, the contractor or landowner shall either pull the drive pipe or leave it in place. If the drive pipe is left in place, the sand point well shall be plugged from the bottom of the well to three feet below the ground surface with approved grouting material. The drive pipe well shall be cut off three feet below the ground surface and the remaining three foot deep hole shall be backfilled with surface soil.

If the drive pipe is completely pulled, the remaining hole shall be plugged with approved grouting material from the bottom of the remaining hole to three feet below the ground surface. The hole shall be backfilled with surface soil from 3 feet to ground surface. (Authorized by K.S.A. 1991 Supp. 82a-1205; implementing K.S.A. 82a-1202, K.S.A. 1991 Supp. 82a-1205; effective, E-74-34, July 02, 1974; modified, L. 1975, ch. 481, May 01, 1975; amended May 01, 1980; amended May 01, 1983; amended May 01, 1987; amended June 21, 1993.)

28-30-7. Plugging of abandoned wells, cased and uncased test holes.

(a) All water wells abandoned by the landowner on or after July 01, 1979, and all water wells that were abandoned prior to July 01, 1979 which pose a threat to groundwater supplies, shall be plugged or caused to be plugged by the landowner. In all cases, the landowner shall perform the following as minimum requirements for plugging abandoned wells.

(1) The casing shall be cut off three feet below ground surface and removed.

(2) All wells shall be plugged from bottom to top using volumes of material equaling at least the inside volume of the well.

(3) Plugging top of well:

(A) For cased wells a grout plug shall be placed from six to three feet below ground surface.

(B) For dug wells, the lining material shall be removed to at least five feet below ground surface, and then sealed at five feet with a minimum of six inches of concrete or other materials approved by the department. Compacted surface silts and clays shall be placed over the concrete seal to ground surface.

(4) Any groundwater displaced upward inside the well casing during the plugging operation shall be removed before additional plugging materials are added.

(5) From three feet below ground level to ground level, the plugged well shall be covered over with compacted surface silts or clays.

(6) Compacted clays or grout shall be used to plug all wells from the static water level to six feet below surface.

(7) All sand and gravel used in plugging abandoned domestic or public water supply wells shall be chlorinated prior to placement into a well.

(b) Abandoned wells formerly producing groundwater from an unconfined aquifer shall be plugged in accordance with the foregoing and in addition shall have washed sand, and gravel or other material approved by the department placed from the bottom of the well to the static water level.

(c) Abandoned wells, formerly producing groundwater from confined and unconfined aquifers or in confined aquifers only, shall be plugged according to K.A.R. 28-30-7(a) and by using one of the following additional procedures:

(1) The entire well column shall be filled with grout, or other material approved by the department, by use of a grout tremie pipe.

(2) A 10 foot grout plug shall be placed opposite the impervious formation or confining layer above each confined aquifer or aquifers by use of a grout tremie pipe; and

(A) The space between plugs shall be filled with clays, silts, sand and gravel or grout and shall be placed inside the well so as to prevent bridging.

(B) A grout plug at least 20 feet in length shall be placed with a grout pipe so at least 10 feet of the plug extends below the base of the well casing and at least 10 feet of the plug extends upward inside the bottom of the well casing.

(C) A grout plug at least ten feet in length shall be placed from at least 13 feet below ground level to the top of the cut off casing.

(3) Wells that have an open bore hole below the well casing, and where the casing was not grouted into the well bore when the well was constructed, shall be plugged by (1) or (2) above, except that the top 20 feet of well casing shall be removed or perforated with the casing ripper or similar device prior to plugging. If the well is plugged according to part (2) of this subsection, the screened or perforated intervals below the well casing shall be grouted the entire length by use of a grout tremie pipe.

(d) Plugging of abandoned holes. If the hole penetrates an aquifer containing water with more than 1,000 milligrams per liter, mg/l, total dissolved solids or is in an area determined by the department to be contaminated, the entire hole shall be plugged with an approved grouting material from the bottom of the hole, up to within three feet of the ground surface using a grout tremie pipe or similar method. From three feet below ground surface to ground surface the plugged hole shall be covered over with compacted surface silts or clays; otherwise, the hole shall be plugged in accordance with the following paragraphs.

(1) Plugging of abandoned cased test holes. The casing shall be removed if possible and the abandoned test hole shall be plugged with an approved grouting material from the bottom of the hole, up to within three feet of the ground surface, using a grout tremie pipe or similar method. From three feet below ground surface to ground surface the plugged hole shall be covered over with compacted surface silts or clays.

If the casing cannot be removed, in addition to plugging the hole with an approved grouting material the annular space shall also be grouted as described in K.A.R. 28-30-6 or as approved by the department.

(2) Abandoned uncased test holes, exploratory holes or any bore holes except seismic or oil field related exploratory and services holes regulated by the Kansas Corporation Commission under K.A.R. 82-3-115 through 82-3-117. A test hole or bore hole drilled, bored, cored or augered shall be considered an abandoned hole immediately after the completion of all testing, sampling or other operations for which the hole was originally intended. The agency or contractor in charge of the exploratory or other operations for which the hole was originally intended is responsible for plugging the abandoned hole using the following applicable method, within three calendar days after the termination of testing other operations.

(A) The entire hole shall be plugged with an approved grouting material from bottom of the hole, up to within three feet of the ground surface, using a grout tremie pipe or similar method.

(B) From three feet below ground surface to ground surface the plugged hole shall be covered over with compacted surface silts or clays.

(C) For bore holes of 25 feet or less, drill cuttings from the original hole may be used to plug the hole in lieu of grouting material, provided that an aquifer is not penetrated or the bore hole is not drilled in an area determined by the department to be a contaminated area.

(3) Plugging of heat pump holes drilled for closed loop heat pump systems. The entire hole shall be plugged with an approved grouting material from bottom of the hole, to the bottom of the horizontal trench, using a grout tremie pipe or similar method approved by the department.

(e) Abandoned oil field water supply wells. A water well drilled at an oil or gas drilling site to supply water for drilling activities shall be considered an abandoned well immediately after the termination of the oil or gas drilling operations. The company in charge of the drilling of the oil or gas well shall be responsible for plugging the abandoned water well, in accordance with K.A.R. 28-30-7(a), (b), and (c), within 30 calendar days after the termination of oil and gas drilling operations.

Responsibility for the water well may be conveyed back to the landowner in lieu of abandoning and plugging the well but the well must conform to the requirements for active or inactive status. The transfer must be made through a legal document, approved by the department, advising the landowner of the landowner's responsibilities and obligations to properly maintain the well, including the proper plugging of the well when it is abandoned and no longer needed for water production activities. If a transfer is to be made, the oil or gas drilling company shall provide the department with a copy of the transfer document within 30 calendar days after the termination of oil or gas drilling operations. Within 30 calendar days of the effective date of the transfer of the well the landowner shall notify the department of the intended use and whether the well is in active status or inactive status in accordance with K.A.R. 28-30-7(f).

(f) Inactive status. Landowners may obtain the department's written approval to maintain wells in an inactive status rather than being plugged if the landowner can present evidence to the department as to the condition of the well and as to the landowner's intentions to use the well in the future. As evidence of intentions, the owner shall be responsible for properly maintaining the well in such a way that:

(1) The well and the annular space between the hole and the casing shall have no defects that will permit the entrance of surface water or vertical movement of subsurface water into the well;

(2) the well is clearly marked and is not a safety hazard;

(3) the top of the well is securely capped in a watertight manner and is adequately maintained in such a manner as to prevent easy entry by other than the landowner;

(4) the area surrounding the well shall be protected from any potential sources of contamination within a 50 foot radius;

(5) if the pump, motor or both, have been removed for repair, replacement, etc., the well shall be maintained to prevent injury to people and to prevent the entrance of any contaminant or other foreign material;

(6) the well shall not be used for disposal or injection of trash, garbage, sewage, wastewater or storm runoff; and

(7) the well shall be easily accessible to routine maintenance and periodic inspection.

The landowner shall notify the department of any change in the status of the well. All inactive wells found not to be in accordance with the criteria listed in lines one through seven above shall be considered to be abandoned and shall be plugged by the landowner in accordance with K.A.R. 28-30-7(a) through (c). (Authorized by K.S.A. 82a-1205; implementing K.S.A. 82a-1202, 82a-1205, 82a-1212, 82a-1213; effective, E-74-34, July 02, 1974; modified, L. 1975, ch. 481, May 01, 1975; amended May 01, 1980; amended May 01, 1983; amended May 01, 1987.)

28-30-8. Pollution sources. Well locations shall be approved by municipal and county governments with respect to distances from pollution sources and compliance with local regulations. The following minimum standard shall be observed.

(a) The horizontal distances between the well and the potential source of pollution or contamination such as sewer lines, pressure sewer lines, septic tanks, lateral fields, pit privy, seepage pits, fuel or fertilizer storage, pesticide storage, feed lots or barn yards shall be 50 feet or more as determined by the department.

(b) Proper drainage in the vicinity of the well shall be provided so as to prevent the accumulation and ponding of surface water within 50 feet of the well. The well shall not be located in a ravine or any other drainage area where surface water may flow into the well.

(c) When sewer lines are constructed of cast iron, plastic or other equally tight materials, the separation distance shall be 10 feet or more as determined by the department.

(d) All wells shall be 25 feet or more from the nearest property line, allowing public right-of-ways to be counted; however, a well used only for irrigation or cooling purposes may be located closer than 25 feet to an adjoining property where:

(1) such adjoining property is serviced by a sanitary sewer and does not contain a septic tank system, disposal well or other source of contamination or pollution; and

(2) the property to be provided with the proposed well is served by both a sanitary sewer and a public water supply. (Authorized by and implementing K.S.A. 82a-1202, 82a-1205; effective, E-74-34, July 02, 1974; modified, L. 1975, ch. 481, May 01, 1975; amended May 01, 1980; amended May 01, 1987.)

28-30-9. Appeals.

(a) Requests for exception to any of the foregoing rules and regulations shall be submitted to the department in writing and shall contain all information relevant to the request.

(1) Those requests shall specifically set forth why such exception should be considered.

(2) The department may grant exceptions when geologic or hydrologic conditions warrant an exception and when such an exception is in keeping with the purposes of the Kansas groundwater exploration and protection act.

(b) Appeals from the decision of the department shall be made to the secretary, who after due consideration may affirm, reverse or modify the decision of the department. (Authorized by K.S.A. 82a-1205; implementing K.S.A. 82a-1202, 82a-1205; effective, E-74-34, July 02, 1974; effective May 01, 1975; amended May 01, 1980; amended May 01, 1983; amended May 01, 1987.)

28-3-10 Water well disinfection for wells constructed or reconstructed for human consumption or food processing.

(a) Gravel for gravel-packed wells shall be disinfected by immersing the gravel in a chlorine solution containing not less than 200 milligrams per liter, mg/l, of available chlorine before it is placed in the wells annular space.

(b) Constructed or reconstructed wells shall be disinfected by adding sufficient hypochlorite solution to them to produce a concentration of not less than 100 mg/l of available chlorine when mixed with the water in the well.

(c) The pump, casing, screen and pump column shall be washed down with a 200 mg/l available chlorine solution.

(d) All persons constructing, reconstructing, or treating, a water well and removing the pump or pump column, replacing a pump, or otherwise performing an activity which has potential for contaminating or polluting the groundwater supply shall be responsible for adequate disinfection of the well, well system and appurtenances thereto. (Authorized by and implementing K.S.A. 82a-1202, 82a-1205; effective, E-74-34, July 02, 1974; modified, L. 1975, ch. 481, May 01, 1975; amended May 01, 1080; amended May 01, 1987.)

28-30-200. Definitions.

In addition to the definitions in K.A.R. 28-30-2, the following definitions shall apply to the Equus Beds groundwater management district no. 2:

(a) "Bedrock" means shale, limestone, sandstone, siltstone, anhydrite, gypsum, salt, or other consolidated rock that can occur at the surface or underlie unconsolidated material.

(b) "Board" means the board of directors constituting the governing body of the Equus Beds groundwater management district no. 2.

(c) "Borehole" means any hole that is drilled, cored, bored, washed, driven, dug, or otherwise excavated, in which the casing and screen have been removed or in which the casing has not been installed.

(d) "Contaminate" means to engage in any act or omission causing the addition or introduction of substances to freshwater in concentrations that alter the physical, chemical, biological, or radiological properties of the freshwater, making the water unfit for beneficial use.

(e) "District" means the Equus Beds groundwater management district no. 2, which is organized for groundwater management purposes pursuant to K.S.A. 82a-1020 et seq., and amendments thereto.

(f) "Fluid" means any material or substance that flows or moves in a semisolid, liquid, sludge, gas, or any other form or state.

(g) "Free-fall" means a method used to place grout in a water well or borehole that meets all of the following conditions:

(1) The total grouting depth below ground level does not exceed 75 feet.

(2) The grouting interval is free of fluids.

(3) The diameter of the water well casing or borehole is sufficient to allow the unobstructed flow of grout throughout the entire grouting interval.

(4) Grout is poured or discharged into the water well or borehole at a controlled rate.

(h) "Fresh groundwater" means water containing not more than 1,000 milligrams of total dissolved solids per liter and 500 milligrams of chloride per liter.

(i) "Grout" has the meaning specified in K.A.R. 28-30-2.

(j) "Grout seal" means grout that is installed, placed, pumped, or injected to create a permanent, impervious watertight bond in a well casing, annular space, geologic unit, or any other apertures or apparatuses associated with a water well or borehole.

(k) "Inactive well" means a water well that meets the following conditions:

(1) Is not operational;

(2) is properly constructed as specified in K.A.R. 28-30-5 or K.A.R. 28-30-6;

(3) is equipped with a watertight seal; and

(4) is maintained in good repair until the water well is returned to service as an active water well.

(l) "Licensed geologist" means a geologist licensed to practice geology in Kansas by the Kansas board of technical professions.

(m) "Licensed professional engineer" means a professional engineer licensed to practice engineering in Kansas by the Kansas board of technical professions.

(n) "Monitoring well" means a water well used to monitor, obtain, or collect hydrologic, geologic, geophysical, chemical, or other technical data pertaining to groundwater, surface water, or other hydrologic conditions.

(o) "Test borehole" means a borehole used to obtain or collect hydrologic, geologic, geophysical, chemical, or other technical data pertaining to groundwater, surface water, or other hydrologic conditions by means of placing sampling, logging, testing, casing, screen, or associated tools or equipment in the borehole for fewer than 30 days. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028 and K.S.A. 82a-1213; effective P-September 30, 2005)

28-30-201. Plugging operations; notification; report.

(a) All plugging operations shall be supervised by one of the following:

(1) A water well contractor licensed by the department;

(2) a licensed professional engineer or licensed geologist; or

(3) the water well or borehole owner, or the landowner of the property on which the water well or borehole is located.

(b) Each water well or borehole owner, or the landowner of the property on which the water well or borehole is located, shall notify the district within 48 hours before any plugging operations occur.

(c) Within 30 days after the plugging operation is completed, one of the following requirements shall be met:

(1) The water well contractor, licensed professional engineer, or licensed geologist that supervised the water well or borehole plugging operations shall submit a completed report of the work on the department's plugging record form WWC-5P or WWC-5 to the department, the district, and the landowner.

(2) The water well or borehole owner, or the landowner of the property on which the water well or borehole is located, shall submit a completed report of the work on the department's plugging record form WWC-5P or WWC-5 to the department and the district. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028 and K.S.A. 82a-1213; effective P-September 30, 2005)

28-30-202. Plugging operations for an abandoned water well or borehole; responsibility.

(a) Each water well or borehole shall be considered abandoned if at least one of the following conditions exists:

(1) The water well or borehole was not completed.

(2) The water well or borehole threatens to contaminate fresh groundwater.

(3) The water well or borehole poses a safety or health hazard.

(4) Uncontrolled fluid flow is encountered or present in the water well or borehole.

(5) The use of the water well or borehole has ceased.

(6) The borehole testing, sampling, or other operations are completed within 30 days of completion of the borehole drilling.

(7) The water well or borehole owner has not demonstrated the intention to use the water well or borehole.

(8) The water well can not be maintained in an active or inactive status.

(9) The water well or borehole is not operational or functional for the intended use.

(b) Each water well or borehole owner or the landowner of the property shall plug or cause an abandoned water well or borehole to be plugged as required in subsection (c) of this regulation.

(c) Except as specified in subsection (e), the minimum plugging operations for an abandoned water well or borehole shall include the following:

(1) Before plugging operations begin, the following water well or borehole data shall be recorded as follows:

(A) The legal description of the water well or borehole location, to the nearest 10-acre tract and, if available, the geographic coordinates consisting of the latitude, longitude, and base datum;

(B) the diameter of the water well or borehole;

(C) the static water level; and

(D) the total depth of the water well or borehole.

(2) The materials used to plug a water well or borehole shall be clean, free of defects, properly prepared, and installed according to the manufacturer's specifications.

(3) All plugging material that forms a bridge, entraps air or other fluids, or forms a blockage in the water well or borehole shall be freed or removed before continuing plugging operations.

(4) All pumping, sampling, logging, and related equipment and any other material or debris in the water well or borehole shall be removed from the water well or borehole.

(5) The annular space of the water well shall be grouted as specified in K.A.R. 28-30-203.

(6) Before plugging operations begin and when plugging operations are suspended or interrupted, the opening of the water well or borehole shall be secured to prevent fluids from entering the water well or borehole.

(7) Before placement of any plugging material, the water well or borehole shall be disinfected as specified in K.A.R. 28-30-205.

(8) Except as specified in subsection (d) of this regulation, all of the following minimum grouting requirements shall be met:

(A) The water well or borehole shall be grouted from the bottom to three feet below ground level.

(B) Each water well meeting the requirements of subsection (d) shall be grouted from the top of the sand or gravel plugging material to three feet below ground level.

(C) Grout shall be placed in the water well or borehole using one of the following:

(i) A grout tremie pipe;

(ii) free-fall; or

(iii) a grouting procedure recommended by the grout manufacturer.

(D) Grout shall be allowed to cure as recommended by the grout manufacturer.

(9) Except as required by K.A.R. 28-30-203, the water well casing shall be cut off at a minimum of three feet below land surface and removed.

(10) From three feet below land surface to land surface, the water well or borehole shall be backfilled with clean, compacted topsoil and sloped so that drainage or runoff is directed away from the plugged water well or borehole.

(d) Any water well or borehole owner, landowner of the property, water well contractor, licensed geologist, or licensed professional engineer may utilize coarse sand or fine gravel to plug a water well by filling the water well casing to the static water level or six feet below ground level, whichever is the greater distance below ground level, if both of the following water well conditions are present:

(1) The water well is cased.

(2) The water well is completed in a single unconfined aquifer.

(e) Drill cuttings from the original borehole may be used to plug a borehole that meets all of the following conditions:

(1) The depth of the borehole is less than the highest historical groundwater level.

(2) The depth of the borehole is 25 feet or less below ground level.

(3) The borehole is not located in a contaminated area. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028 and K.S.A. 82a-1213; effective P-September 30, 2005)

28-30-203. Annular space grouting procedures.

(a) Each water well or borehole owner or landowner of the property with an abandoned water well that was constructed on or after May 1, 1983 shall have the water well's annular space grouted as follows:

(1) From three feet below ground level to a minimum of 20 feet below ground level; or

(2) below the point at which a pitless well adapter attaches to the well casing to a minimum of 20 feet below the pitless well adapter.

(b) The annular space of each abandoned water well in which the water well was constructed before May 1, 1983 shall be grouted as follows:

(1) If the annular space does not contain grout or gravel pack and is free of debris, the grout shall be placed in the annular space in the following manner:

(A) From three feet below ground level to 20 feet below ground level; or

(B) below the point at which a pitless well adapter attaches to the well casing to a minimum of 20 feet below the pitless well adapter.

(2) If the annular space contains gravel pack or other material, all of the following requirements shall be met:

(A) The well casing shall be removed to a depth of four feet below ground level.

(B) The annular space shall be freed of gravel pack, any other material, and fluid from the top of the casing to six feet below the top of the well casing.

(C) The grout shall be placed in the annular space from six feet below the top of the well casing to one foot above the top of the well casing.

(c) From three feet below ground level to ground level, the water well or borehole shall be backfilled with clean, compacted topsoil and sloped so that the drainage or runoff is directed away from the plugged water well or borehole.

(d) If groundwater is encountered at a depth less than the minimum grouting requirement, the annular space grouting requirement may be modified by requesting a variance from the district as specified in K.A.R. 28-30-208. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028 and K.S.A. 82a-1213; effective P-September 30, 2005)

28-30-204. Inactive well; application; construction and extension.

(a) Each owner of an inactive water well shall meet the following requirements:

(1) Submit a completed, signed, and notarized inactive water well agreement, on a form provided by the district, to the district manager 30 days before placing the well on inactive status. The form shall include a statement that the water well does not pose a public health or safety hazard and does not threaten to contaminate the groundwater;

(2) remove all pumping equipment from the water well;

(3) construct the water well and the annular space as specified in K.A.R. 28-30-6;

(4) seal and maintain the water well and the annular space to prohibit the entrance of surface fluids and materials and the vertical movement of subsurface water into the well and to prevent damage;

(5) post a sign that meets the following conditions within three feet of the water well:

(A) Has a minimum height of three feet above land surface;

(B) is easily visible;

(C) is continually maintained; and

(D) is constructed with the words “Inactive Water Well” and a legal description consisting of the 10-acre tract, section, township, and range description printed legibly; and

(6) securely install a watertight seal or cap on the water well casing opening a minimum of one foot above land surface that consists of one of the following:

(A) Steel plating that is a minimum of 1/4 inch thick and is welded to the casing opening;

(B) a polyvinylchloride cap glued to the water well casing opening, with a minimum standard dimension ratio (SDR) of 21 or less on well casing less than four inches in diameter and a minimum SDR of 26 or less on well casing four or more inches in diameter. The SDR shall be calculated by dividing the casing's outside diameter (OD) by its minimum wall thickness (MWT); or

(C) any other seal or cap that is approved by the district manager.

(b) Each water well owner shall repair all damage to the water well within 30 days, unless the district manager determines that the water well poses a public health or safety hazard, in which case the district manager shall set the time period for fewer than 30 days.

(c) Each water well owner shall notify the district within 30 days after the water well is returned to service as an active water well.

(d) The district manager or a staff member of the district may inspect any inactive water well.

(e) Each water well owner shall be responsible for properly maintaining the water well in the inactive status.

(f) A radius of 50 feet around the inactive well shall be free of contamination.

(g) An inactive water well shall not be used for disposal or injection of any fluids or materials.

(h) Each inactive water well shall be easily accessible for routine maintenance and inspection.

(i) Each water well owner shall notify the district manager of any change in the condition of the water well.

(j) Each inactive water well that does not meet the requirements of these regulations shall be deemed abandoned and shall be plugged in accordance with these regulations.

(k) The expiration date of the inactive water well period may be extended beyond the date authorized in the approved inactive water well agreement or the date of any extension authorized by the

district manager, if the water well is in good repair and meets the requirements of these regulations. The extension of time shall not exceed one year beyond the expiration date of the inactive well agreement or the date of any authorized extension.

(l) Each approved inactive water well request and each approved extension of time shall be reported by the district to the department, in writing, within 30 days of approval on a form provided by the district. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028 and K.S.A. 82a-1213; effective P-September 30, 2005)

28-30-205. Disinfection of an abandoned water well or borehole.

(a) Except at specified in subsection (b), the following minimum quantities of sodium hypochlorite with 5.25 percent to 6.0 percent strength, manufactured under trade names including Clorox, Purex, Sno-White, and Topco, and other bleach products with similar properties, shall be used to disinfect each abandoned water well or borehole:

Water well casing or hole diameter (inches)	Sodium hypochlorite (fluid ounces per foot of water column)
1.25	0.015
1.5	0.023
2	0.041
2.5	0.064
3	0.094
3.5	0.127
4	0.165
5	0.259
6	0.381
8	0.660
10	1.036
12	1.490
14	2.031
16	2.650
18	3.354
24	5.966
30	9.317

(b) Any concentration of sodium hypochlorite not specified in subsection (a) or any combination of calcium hypochlorite may be

used to disinfect an abandoned water well or borehole, if a minimum concentration of 100 milligrams of chlorine solution per liter per foot of water column in the water well or borehole is produced. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028 and K.S.A. 82a-1213; effective P-September 30, 2005.)

28-30-206. Administrative appeal to the board.

(a) Any owner of a water well or borehole or any person whose legal rights, duties, privileges, immunities, or other legal interests are affected by an order issued by the district may request an appeal hearing with the board.

(b) The request for hearing shall be filed with the board within 30 days after service of the order on the owner or owners of the water well or borehole or any person whose legal rights, duties, privileges, immunities, or other legal interests are affected by the order. The request for hearing shall state the basis for requesting a hearing and shall be accompanied by documentation supporting the request.

(c) During the hearing, the board may take into consideration any relevant information or data, including information and data from any person whose legal rights, duties, privileges, immunities, or other legal interests may be affected by the order.

(d) After consideration of all information and data presented, the board shall issue one of the following:

(1) An order remanding the case to the district manager with instructions for additional investigation; or

(2) a final order that contains findings of fact and conclusions of law.

(e) Within 15 days of the service of a final order, the owner or owners of the water well or borehole or any person whose legal rights, duties, privileges, immunities, or other legal interests are affected may file a written petition for reconsideration to the board. The petition for reconsideration shall state the basis and contain any facts and conclusions of law that are in dispute.

(f) The board shall render a written order denying the petition for reconsideration, granting the petition for reconsideration and modifying the final order, or granting the petition for

reconsideration and setting the matter for further proceedings. After further proceedings, the petition for reconsideration may be denied or granted in whole or in part.

(g) Unless clear and convincing evidence is presented to the board, the board shall not render a written order if the order would result in any of the following:

(1) The impairment of an existing groundwater use;

(2) an adverse effect on public health, safety, or the environment;

(3) the threat of groundwater contamination;

(4) an adverse effect on the public interest; or

(5) the impairment of the board's ability to apply and enforce these regulations or the management program specified in K.S.A. 82a-1029, and amendments thereto.

(h) Any owner or owners or any person whose legal rights, duties, privileges, immunities, or other legal interests are affected by a final order or order rendered upon reconsideration may seek judicial review pursuant to the act for judicial review and civil enforcement of agency actions specified in K.S.A. 77-601 et seq., and amendment thereto.

(i) Each order issued by the board shall be mailed to the owner or owners; any person whose legal rights, duties, privileges, immunities, or other legal interests are affected by the order; and the department. Service shall be deemed complete upon mailing. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028; effective P-September 30, 2005)

28-30-207. Variance; extension of time.

(f) If an individual or party wants a variance from any of the regulations contained in K.A.R. 28-30-200 through K.A.R. 28-30-206 or an extension of time pursuant to K.A.R. 28-30-204, the individual or party shall submit a request, in writing, to the district.

(1) Each request shall include the following:

(A) The name, address, telephone number, and contact person of the individual or party requesting the variance or extension of time;

(B) the specific legal description of the site location to which the variance or extension of time would apply;

(C) the specific regulation from which the variance is sought or the amount of time requested; and

(D) the reason for requesting the variance or extension of time and any supporting data.

(2) A variance or extension of time may be granted by the district manager if the variance or extension is in keeping with the purposes of the Kansas groundwater exploration and protection act and the groundwater management district act.

(b) Each variance or extension of time granted by the district manager shall be reported by the district to the department within 30 days of approval.

(c) Each individual or party who wants an extension of time for the inactive water well period shall submit the request at least 30 days before the expiration date on a form provided by the district. (Authorized by and implementing K.S.A. 2004 Supp. 82a-1028; effective P-September 30, 2005.)

Effective May 01, 1980

Kansas Department of Health and Environment
Approved Water Well Casing
(Authorization K.A.R. 28-30-6(h))

Water Well Casing for Water Wells Other Than Public
Water Supply and Reservoir Sanitation Zone Water Wells

STEEL AND WROUGHT IRON

	Nominal Diameter, (in inches)									
Dept of Casing in Feet	04	06	08	10	12	14	16	18	24	30
	Minimum Wall Thickness*									
0-100	10	10	10	10	10	10	10	10	7	.219
100-200	10	10	10	10	10	7	7	7	.219	.219
200-400	10	10	10	10	7	7	7	.219	.250	.250
400-600	7	7	7	7	7	7	.219	.250	.312	.312
600 +	7	.219	.219	.219	.219	.219	.250	.375	.375	.375

*Decimal numbers indicate thickness in inches. Whole numbers indicate the United States standard gage (10 gage=0.141 inches and 7 gage=.0179 inches.)

Kansas Department of Health and Environment
Approved Water Well Casing
(Authorization K.A.R. 28-30-6(h))

Water Well Casing for Water Wells Other Than Public
Water Supply and Reservoir Sanitation Zone Water Wells

THERMAL PLASTIC WATER WELL CASING

For Polyvinyl Chloride (PVC), Styrene Rubber (SR)
which is the same as Rubber Modified Polystyrene (RMP)
and Acrylonitrile - Butadiene Styrene (ABS)

Minimum Wall Thickness (inches) and Tolerances (inches) made in
Standard Dimension Ratios (SDR)

Normal	SDR 26		SDR 21		SDR 17		SDR 13.5	
Pipe Size	Min.	Tol.	Min.	Tol.	Min.	Tol.	Min.	Tol.
2	-----	-----	0.113	0.020	0.140	0.020	0.176	0.021
2.5	-----	-----	0.137	0.020	0.169	0.020	0.213	0.026
3	-----	-----	0.167	0.020	0.206	0.025	0.259	0.031
3.5	-----	-----	0.190	0.023	0.235	0.028	0.296	0.036
4	0.173	0.021	0.214	0.026	0.265	0.032	0.333	0.040
5	0.214	0.027	0.265	0.032	0.327	0.039	0.412	0.049
6	0.255	0.031	0.316	0.038	0.390	0.047	0.491	0.058
8	0.332	0.040	0.410	0.049	0.508	0.061	-------	------
10	0.413	0.050	0.511	0.061	0.632	0.076	-------	------
12	0.490	0.059	0.060	0.073	0.750	0.090	-------	------
14	0.539	0.065						
16	0.616	0.074						

The minimum is the lowest wall thickness of the wall casing pipe at any cross section. All tolerances are on the plus side of the minimum requirement.